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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CAI, WAYNE HUU

ART UNIT

PAPER NUMBER

2617

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/674,791

Applicant(s)

ZIMMERMANN ET AL.

Examiner

Wayne Cai

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-16, 18, 20 and 23-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-16, 18, 20 and 23-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed July 11, 2007 have been fully considered but they are not persuasive.

The Applicant argues that Kobayashi fails to disclose "the step of assessing plural frequencies." The Examiner respectfully disagrees. The Examiner also invites the Applicant to refer to paragraph 0132 where the passage states " there is provided a radio communication system comprising a base station and one or more than one terminal communication devices for radio communications between said base station and said one or more than one terminal communication devices, using a plurality of frequency channels." Furthermore, paragraph 0136 states that " an interference wave signal detection means for detecting any interference wave signal being transmitted by way of any of said frequency channels." The Examiner also notes that figure 22 illustrates **the frequency band between 5.25 GHz and 5.35 GHz is divided into four frequency channels of 20 MHz.**

Based on the passages mentioned above, it is clear to one skilled in the art that detecting any interference wave signal means that one or more than one interference signal will be detected by the method or system of Kobayashi. In addition, since the frequency band as disclosed by Kobayashi is divided into plurality of frequency channels of 20 MHz. It also means that the plurality of frequencies are detected or

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assessed. Thus, Kobayashi clearly reads on "the step of assessing plural frequencies" of claimed invention.

Lastly, the Examiner respectfully reminds the Applicant to respond 35 USC § 101 rejections that were brought to the Applicant's attention in prior office action.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claim 29 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Specifically, the computer program is considered as the "functional descriptive material". Therefore, the functional descriptive material must be recorded on some computer-readable medium so that it could be become structurally and functionally interrelated to the medium and will be statutory since use of the technology permits the function of the descriptive material to be realized. The Applicant should amend the claim language as suggested below.

1. "computer readable medium" encoded with _____

[a] "a computer program"

[b] "software"

[c] "computer executable instructions"

[c] "instructions capable of being executed by a computer"

2. "a computer readable medium" _____ "computer program"

[a] storing a

[b] embodied with a

[c] encoded with a

[d] having a stored

[e] having an encoded

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 3-5, 9, 23, 29, and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Kobayashi et al. (hereinafter "Kobayashi", US 2001/0039183).

Regarding claim 23, Kobayashi discloses a method of controlling frequency selection in a wireless communication system, the method comprising:

- a) assessing plural frequencies with respect to a radar interference signal (paragraphs 0123-0127, 0132-141, 0184, 0187, and 0203);
- b) allocating a quality parameter to each assessed frequency, the quality parameter indicating a probability that the frequency is occupied by the radar interference signal (paragraph 0187);
- c) selecting one or more of the plural frequencies in dependence on the allocated quality parameters (paragraphs 0188 and 0189); and
- d) further assessing the one or more of the plural frequencies selected in act c) with respect to transmission quality and selecting a frequency for use by the system (paragraph 0193).

Independent claims 29 and 30 are similar to independent claim 23; therefore, they are also rejected for the same reasons set forth above.

Regarding claim 3, Kobayashi discloses all limitations recited within claim as described above. Kobayashi also discloses wherein the quality parameter can assume any value between a lower quality border value and an upper quality border value (paragraph 0187).

Regarding claim 4, Kobayashi discloses all limitations recited within claim as described above. Kobayashi also discloses wherein in step c) only those frequencies are selected to which quality parameters satisfying a threshold condition are allocated (paragraphs 0188-0189).

Regarding claim 5, Kobayashi discloses all limitations recited within claim as described above. Kobayashi also discloses wherein at least step a) is performed during a normal transmission mode (paragraph 0184).

Regarding claim 9, Kobayashi discloses all limitations recited within claim as described above. Kobayashi also discloses wherein, if at least one of the radar interference signal or other interference signal is detected in act d), repeating act a) to c) (paragraph 0187).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (hereinafter "Kobayashi", US 2001/0039183).

Regarding claims 24-26, Kobayashi discloses all limitations recited within claims as described above. Kobayashi, however, does not specifically teach performing act a) for a time period that corresponds to at least one typical radar pulse period, or ten seconds, or four to twenty seconds. However, it is obvious and/or well known in the art that the time span of one to two antenna rotations (about 10 to 20 seconds) is usually required for safely detecting the radar signals. Therefore, it is obvious to one skilled in the art to monitor for radar interference signals for a period of this known time span.

Regarding claims 27, and 28, Kobayashi discloses all limitations recited within claims as described above. Kobayashi, however, does not specifically teach wherein the system is a High Performance Radio Local Area Network, and the system is an IEEE 802.11 a/h system. However, the features recited within claims are simply the standards, which is obvious and/or well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the known standards in the current invention in order to effectively detect the interference signals in the wireless network.

8. Claims 10-15, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (hereinafter "Kobayashi", US 2001/0039183) in view of Meredith et al. (hereinafter "Meredith", US 6,052,605).

Regarding claim 10, Kobayashi discloses all limitations recited within claim as described above, but does not specifically disclose feature of claim 10.

In a similar endeavor, Meredith discloses a continuous interference assessment and avoidance in a land mobile radio system. Meredith further discloses a continuous interference assessment and avoidance in a land mobile radio system. Meredith also discloses wherein during regular operation receive/transmit pauses are artificially created (col. 2, lines 28-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Kobayashi in view of Meredith.

The motivation/suggestion for doing so would have been to accurately detect the interference signals.

Regarding claims 11, and 12, Kobayashi and Meredith disclose all limitations recited within claim as described above. Meredith further discloses a continuous interference assessment and avoidance in a land mobile radio system. Meredith also discloses periodically monitoring one or more of the selected frequencies to assess an average quality thereof (col. 2, lines 41-46). Even though, Meredith does not specifically disclose transmitting on the one or more frequencies having the highest average quality. It is however, obvious to one skilled in the art to transmit the highest average quality since the average quality has been obtained by monitoring, and calculated.

Regarding claim 13, Kobayashi and Meredith disclose all limitations recited within claim as described above. Meredith also discloses wherein after a predefined period of time the method returns to step a) (col. 2, lines 41-45).

Regarding claim 14, Kobayashi and Meredith disclose all limitations recited within claim as described above. It is also obvious to one skilled in the art that for a specific transmission frequency the predefined period of time is selected in dependence on the quality parameter previously allocated to this transmission frequency (i.e., when there is no potential interference detected, then the selected frequency would still be able to use in the channel).

Regarding claim 15, Kobayashi and Meredith disclose all limitations recited within claim as described above. It is also obvious to one skilled in the art that the predefined period of time is selected additionally in dependence the transmission quality of the currently used transmission frequency (e.g., when there is no potential interference detected, then the selected frequency would still be able to use in the channel).

Regarding claim 18, Kobayashi and Meredith disclose all limitations recited within claim as described above. Meredith also discloses a continuous interference assessment and avoidance in a land mobile radio system. Meredith also discloses stored on a computer readable recording medium (col. 2, lines 41-46).

9. Claims 2, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi in view of Wallstedt et al. (hereinafter "Wallstedt", US – 6,466,793 B1).

Regarding claim 2, Kobayashi discloses all limitations recited within claims as described above, but does not specifically disclose for the quality parameter can assume one of a plurality of pre-defined values, a first value indicating that a frequency is occupied, a second value indicating that a frequency is not occupied, and a third value indicating that a frequency might be occupied.

In a similar endeavor, Wallstedt discloses an automatic frequency allocation (AFA) for wireless office systems sharing the spectrum with public systems. Wallstedt also discloses the quality parameter can assume one of a plurality of pre-defined values, a first value indicating that a frequency is occupied, a second value indicating that a frequency is not occupied (col. 1, line 59 – col. 2, line 2), and except for a third value indicating that a frequency might be occupied.

However, it is obvious to one skill in the art to arrive at the invention with the third value indicating that a frequency might be occupied since it is obvious to include different quality parameters in controlling the frequency selections in wireless communications so that the systems could determine when to switch to the other frequency bands.

Regarding claim 16, Kobayashi discloses all limitations recited within claims as described above, but does not specifically disclose wherein prior to switching from a first transmission frequency to a second transmission frequency, the second transmission frequency is subjected to at least steps a) and b).

In a similar endeavor, Wallstedt discloses an automatic frequency allocation (AFA) for wireless office systems sharing the spectrum with public systems. Wallstedt

also discloses wherein prior to switching from a first transmission frequency to a second transmission frequency, the second transmission frequency is subjected to at least steps a) and b) (col. 5, line 45 – col. 6, line 32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the step of monitoring and allocating quality parameters so that it switches the transmission frequency only when required.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi in view of Wiese et al. (hereinafter "Wiese") (US – 6,404,830 B2).

Regarding claim 6, Kobayashi discloses all limitations recited within claims as described above, but does not specifically disclose wherein at least step a) is performed prior to a normal transmission mode.

In a similar endeavor, Wiese discloses a digital radio frequency interference canceller. Wiese also discloses wherein at least step a) is performed prior to a normal transmission mode (fig. 11, element 1102, and its descriptions).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the step of monitoring prior to a normal transmission mode so that the interference signals could be prevented in advance.

11. Claims 7-8, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi in view of Gray (US 2002/0160769 A1).

Regarding claim 7, Kobayashi discloses all limitations recited within claims as described above, but does not specifically disclose wherein at least step a) is performed by a separate monitoring device in communication with at least one of an access point and a central controller (CC) of the wireless communication system.

In a similar endeavor, Gray discloses an apparatus and associated method for reporting a measurement summary in a radio communication system. Gray also discloses wherein at least step a) is performed by a separate monitoring device (MD) in communication with at least one of an access point (AP) and a central controller (CC) of the wireless communication system (fig. 1, elements 14, 18, and 46 and its descriptions).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the monitoring device, access point, and central controller to communicate with each other in detecting the interference signals.

Regarding claim 8, Kobayashi discloses all limitations recited within claims as described above, but does not specifically disclose communicating the allocated quality parameters to an access point or a central controller of the same or a neighboring wireless communication system.

In a similar endeavor, Gray discloses an apparatus and associated method for reporting a measurement summary in a radio communication system. Gray also discloses comprising communicating the allocated quality parameters to an access point or a central controller of the same or a neighboring wireless communication system (paragraphs 0044-0046).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the step of communicating the allocated quality parameters to an access point so that the frequency range could be selected.

Regarding claim 20, Kobayashi discloses all limitations recited within claims as described above, but does not specifically disclose a monitoring device (MD) associated with or remote from at least one of an access point (AP) or a central controller (CC), wherein the monitoring device (MD) includes at least the first unit.

In a similar endeavor, Gray discloses an apparatus and associated method for reporting a measurement summary in a radio communication system. Gray also discloses a monitoring device (MD) associated with or remote from at least one of an access point (AP) or a central controller (CC), wherein the monitoring device (MD) includes at least the first unit (paragraphs 0043-0046; fig. 1 and its descriptions).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a monitoring device, access point, central controller to monitor, and report the radar-like interference signals.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wayne Cai whose telephone number is (571) 272-7798. The examiner can normally be reached on Monday - Thursday from 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on (571) 272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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